Attorney's Docket No.: 07072-127001 / EMC 00-186

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: David Meiri Art Unit: 2157

Serial No.: 09/768,323 Examiner: Barbara N. Burgess

Filed : January 24, 2001 Conf. No. : 3938

Title : INTER-PROCESSOR MESSAGING

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

TRANSMITTAL OF BRIEF ON APPEAL

Further to the Notice of Appeal filed August 20, 2007, Applicant submits the enclosed Brief on Appeal, along with a Petition for One-Month Extension of Time.

Please apply any charges or credits to Deposit Account No. 06-1050, referencing Attorney Docket No. 07072-127001.

Respectfully submitted,

Date: Nousalt 16, 2007

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Mail Stop Appeal Brief - Patents

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

BRIEF ON APPEAL

(1) Real Party in Interest

The real party in interest is EMC Corporation, a corporation of Massachusetts having a place of business at 35 Parkwood Drive, Hopkinton, MA, as evidenced by an assignment executed January 19, 2001 and recorded at the U.S. Patent Office on January 24, 2001 at Reel 011487, Frame 0177.

(2) Related Appeals and Interferences

There are no related appeals or interference.

(3) Status of Claims

Claims 1-9 are pending and on appeal. Of these, claim 1 is independent.

(4) Status of Amendments

All amendments have been entered.

(5) Summary of Claimed Subject Matter

CLAIM 1

"A method for posting a message on a message list accessible to a plurality of processors" is described in connection with FIG. 4, on page 10 of the specification. The message list 34 is described on page 7, lines 26-27 and shown in FIG. 3. The message list resides in a shared memory 12 accessible to processor 28, as recited on page 7, lines 17-22. Specifically,

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"selecting a new-message slot" is described in connection with step 62 in FIG. 4 on page 10, lines 3-8.

The limitation of "placing said message in said new-message slot" is described in connection with step 64 of FIG. 4 on page 10, lines 20-21. The limitation of "modifying said new-message slot to specify an intended recipient of said message" in described in connection with step 66 of FIG. 4, page 10, lines 21-23. That the intended recipient is selected from a plurality of processors is apparent from the description of the destination mask 52 on page 9, lines 5-8.

Claim 2's additional limitation of "inserting said new-message slot into said message list" is disclosed by the difference between FIGS. 5 and 6 as well as in the accompanying text between page 11, line 23 and page 12, line 12, where "inserting" is often referred to as "splicing." This claim limitation is further disclosed on page 3, line 23-28.

Claim 3's additional limitation of "setting a first pointer on said new-message slot to point to said first existing-message slot and a second pointer on said new-message slot to point to said second existing message-slot" is shown in FIGS. 6 and 7, in which insertion of message slot (7) proceeds by setting one pointer to point to slot (1) and another pointer to point to slot (6). This is also described in the accompanying text between page 11, line 23 and page 12, line 12, where "inserting" is often referred to as "splicing." This claim limitation is further disclosed on page 3, line 23-28.

Claim 5's additional limitation of "modifying a destination mask associated with said new-message slot" is described in connection with step 66 of FIG. 4, and page 10, lines 21-23. Examples of destination masks 52 are shown in FIG. 8.

Claim 6's additional limitation of "selecting, from a plurality of constituent data-elements of said data mask,...a selected data-element corresponding to a selected processor" is disclosed at page 10, lines 23-25, which refers to the setting of "those bits in the destination mask 52 that correspond to intended recipients."

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Claim 6's additional limitation of "modifying said selected data-elements to indicate that said selected processor is an intended recipient" is disclosed on page 10, lines 23-25, which describes the setting of bits in a destination mask **52**, with each bit corresponding to a particular processor.

Claim 7's additional limitation of "updating a message directory" is described on page 11, lines 11-15. A message directory 38 is shown in FIG. 4.

Claim 8's additional limitation of updating an attention mask is described between page 8, line 23 to page 9, line 1. An attention mask 48 is shown in FIG. 3.

(6) Grounds of Rejection to be Reviewed on Appeal

Claims 1-9 stand rejected under 35 USC §103(a) as being rendered obvious by the combination of *Mondrosch*, U.S. Patent No. 5,379,031 and *Tugenberg*, U.S. Patent No. 5,335,281.

(7) Argument

SECTION 103 REJECTION OF CLAIM 1

Mondrosch is non-analogous art

Mondrosch describes a way to send a message to several pagers, all of which share a common "maildrop address." These messages are stored in certain designated "message slots" located in a pager's memory. When a pager receives a message designated for a maildrop address, it saves the message into one of these slots. This overwrites any existing message in the slot.

¹ Claim 1's term "message-slot" appears throughout the *Mondrosch* specification. Hence, a simple text search for terms used in claim 1, without further analysis, would have identified *Mondrosch* as being highly relevant. The citation of *Mondrosch* thus reveals a limitation of relying on a simple text search. In citing *Mondrosch*, the Examiner appears to have confused searching the prior art for the *claimed invention*, and searching the prior art for words used to claim the invention.

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Mondrosch recognized that sometimes a new message overwrites an old message before the pager's owner has had a chance to read the old message. Mondrosch's system is essentially a way to avoid overwriting an old message that has not yet been read.

In a section 103 rejection, the references must be analogous prior art. In discussing the meaning of analogous prior art, the Federal Circuit has stated that "[i]n order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned."²

It is apparent that the test to determine whether the reference is analogous prior art requires answering at least one of the following two questions in the affirmative:

- 1. Is the reference in the Applicant's field of endeavor? and
- 2. Is the reference pertinent to the particular problem the Applicant was trying to solve.

In answering the first question, it is necessary to identify the respective fields of endeavor:

- Applicant's field of endeavor is distributed computer systems.
- Mondrosch's field of endeavor is telephone pagers (i.e. "beepers").

The field of endeavor associated with telephone beepers is vastly different from the field of endeavor associated with distributed computer systems. The fact that both fields involve communication is not, by itself, sufficient for *Mondrosch* to be regarded analogous prior art.

For example, as described in the MPEP,³ the Federal Circuit once encountered a case in which the claimed invention and the cited art both involved memories, and specifically SIMM

³ MPEP 211.01(a)(V) "Analogy in the Electrical Arts"

² In re Oetiker, 977 F.2d 1443, 1446, 24 USPO 2d 1443, 1445 (Fed. Cir. 1992).

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memories. Although both the claims and the cited art involved the same memory chips, the Federal Circuit found that claims "directed to single in-line memory modules (SIMMs) for installing on a printed circuit motherboard for use in personal computers" were not in the same field of endeavor as a "[r]eference to a SIMM for an industrial controller...merely because it [the reference] related to memories."

In the present case, the distinction between telephone beepers and distributed computer systems is much greater than the distinction identified by the Federal Circuit in *Wang Laboratories*. In particular, there are at least three differences between Applicant's field of endeavor (distributed computer systems) and that of *Mondrosch* (telephone beepers):

- Distributed computer systems typically communicate over packet-switched networks, whereas beepers communicate over the public telephone network, which is a circuit switched network.
- 2. A computer in a distributed computer system both sends and receives messages. In contrast, beepers only receive messages.
- 3. In a distributed computer system, computers communicate with each other. In contrast, beepers communicate with a central office, not with each other.

As noted above, relationship between beepers and distributed computer systems is clearly far more attenuated than the relationship between SIMMs in a PC and SIMMs on an industrial controller in *Wang Laboratories*. Accordingly, *Mondrosch* and the claimed invention are *not* in the same field of endeavor.

With regard to the second question, it is necessary to identify the pertinent problem that Applicant was trying to solve.

Applicant's technical problem was that of managing a message list used by many different computers to leave messages for other computers. Specifically, Applicant realized that

⁴ Wang Laboratories v. Toshiba, 993 F.2d 858, 2 USPQ 1767 (Fed. Cir. 1993).

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scanning this list took a great deal of time, particularly as the list grew longer. During this scanning time, the list had to be locked. This meant that any computer that wanted to leave a message during a scan would have to wait until the scan was over.

Applicant realized that as the number of computers using the list grew, more and more time would be spent scanning the list. This meant that computers would have to spend increasing amounts of time waiting in line to post or read messages.

Having identified Applicant's technical problem, the next step in the analysis is to identify the particular problem *Mondrosch* sought to solve.

Mondrosch's technical problem was that when a new message was written to a slot, it would sometimes overwrite the old message before the beeper's owner had had a chance to read it. This problem does not involve computers waiting for a chance to access a message list between scans.

Mondrosch's technical problem arises because there are only a limited number of message slots into which one can place new messages. In contrast, in Applicant's system, slots can be added and removed from the message list. Applicant's system is therefore unlikely to face a shortage of slots that would make it necessary to overwrite an old message in a slot. In fact, rather than arising from a shortage of slots, Applicant's technical problem arises from a surfeit of slots, which causes scanning to take longer.

Tugenberg fails to teach the missing claim limitation

The Examiner has conceded that *Mondrosch* fails to teach

"modifying said new-message slot to specify an intended recipient of said message."

The Examiner states that this limitation is disclosed by *Tugenberg*. However, as discussed below, *Tugenberg* teaches *inspecting* information in a message header **205** to decide whether to accept or reject a message. This is not the same as *modifying* a new-message slot.

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Tugenberg⁵ describes a set of interconnected computers, one of which is designated a "supervisory controller."

As *Tugenberg* points out, in prior art systems, if the supervisory controller breaks down, there is no easy way to designate another computer as an acting supervisory controller. As a result, operation halts until the supervisory controller can be fixed.

The cited text from *Tugenberg* describes how a receiving station determines whether it (i.e., the receiving station) or a sending station has the most recent supervisory station information.

According to *Tugenberg*, upon receiving a message, a receiving station inspects the message header to determine who has the most recent supervisory station information. Specifically, the receiving station inspects the "update count field" in the message header. It is this procedure of *inspecting* (as distinct from *modifying*) that the cited text teaches.

The first passage that, according to the Examiner, teaches "modifying said new-message slot to identify an intended recipient of said message" is embedded within the following paragraph:

"If a station receives a message transmitted from a station operating under a different supervisor, the receiving station is able to determine which of the sending and receiving stations has the most recent supervisory station information. This is determined by comparing the update count in the most recently received message header with the update count stored in the receiving station(s). The receiving station(s) may then use this information to decide whether to accept or discard the received message."

The foregoing passage teaches *inspecting* a message header, but not *modifying* the message header. In particular, the foregoing passage teaches that upon receiving a message, a receiving station will

⁵ Tugenberg, et al., U.S. Patent No. 5,335,281.

⁶ Tugenberg, col. 4, lines 11-20, cited portion in italics.

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1. retrieve the update count 220 in the message header 205 (see FIG. 2, and step 320 in FIG. 3);

- 2. compare the retrieved update count with its own update count (see step 340 in FIG. 3); and
- 3. on the basis of the comparison, decide whether to accept or discard the message (see steps 355 and 347 in FIG. 3).

Clearly, the cited passage has nothing to do with *modifying* a new message slot to identify an intended recipient. In fact, there is nothing in the sample header **205** of FIG. 2 that even *could* be modified to specify an intended recipient of the message.

The second passage that, according to the Examiner, teaches modifying a new message slot to identify an intended recipient reads as follows:

"Data extracted from third field 220 are compared to stored update count data (block 340) to determine whether data extracted from third field 220 are greater than, equal to or less than the stored update count data."

This second passage is essentially a more detailed version of the first passage. The second passage describes exactly how one would go about comparing two update counts as described in the first passage. This second passage, like the first, teaches absolutely nothing having to do with *modifying* a message slot to specify an intended recipient of the message.

In the Final Office Action, the Examiner states that a receiving station uses the third field (i.e. the update count field) of the message header 205 to determine whether or not to accept or discard a message. It is unclear what the act of accepting or discarding a message has to do with specifying an intended recipient of that message.

The Examiner may be of the opinion that when a receiving station receives a message, it first checks the update count field **220** to see if it is an intended recipient. Then, upon realizing that it is not an intended recipient, it discards the message.

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In fact, in *Tugenberg*, the update count field has nothing to do with an intended recipient. In *Tugenberg*, a receiving station discards a message because inspecting the update count in field **220** reveals that the message contains obsolete information. The decision to discard a message has nothing to do with the intended recipient of the message.

It is apparent from the foregoing that *Tugenberg* fails to teach the limitation of "modifying" a slot, or anything else for that matter, to specify an intended recipient of a message.

Accordingly, even if one were to somehow combine the teachings of *Mondrosch* with *Tugenberg*, the result would still fail to teach the claimed invention. However, for reasons discussed below, there would be no reason to combine the references.

No motivation to combine the references

In the final office action of June 18, 2007, the Examiner agrees that *Mondrosch* fails to teach:

"modifying said new-message slot to specify an intended recipient"

The Examiner suggests, however, that this limitation can nevertheless be found in *Tugenberg*. The Examiner then proposes to combine *Mondrosch* and *Tugenberg*.

"in order for receiving stations to decide whether to discard or accept a received message."

However, one of ordinary skill in the art would surely have recognized that once a message arrives at *Mondrosch*'s pager, it has <u>already reached</u> its intended destination. One of ordinary skill in the art would find it unnecessary to modify a message slot to specify an intended destination of a message <u>that has already arrived</u> at its intended destination. Indeed, one of ordinary skill in the art would recognize such an exercise as being about as pointless as retrieving an envelope from one's mailbox, and then writing one's own address on the envelope.

⁷ Office Action, page 3.

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Moreover, there is nothing in *Mondrosch*'s "maildrop message slot" that actually could be modified to show an intended recipient. This is hardly surprising. By the time the *Mondrosch* pager receives a message, that message has already arrived at its intended recipient: namely the *Mondrosch* pager itself.

Where the references do not expressly or impliedly suggests the claimed invention, "the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references."

The Examiner has failed to provide even a rudimentary chain of technical reasoning to explain why one of ordinary skill in the art would bother to specify an intended recipient of a message when that *message has already arrived* at its intended recipient.

SECTION 103 REJECTION OF CLAIM 2

Claim 2 recites the additional limitation of a

"message list including a first existing-message slot having a pointer to a second existing-message slot"

The Examiner appears to regard the hierarchical list 127 described in *Mondrosch's* col. 4, lines 20-24 and lines 46-50 as containing the "pointer to a second existing-message slot" recited in claim 2. In *Mondrosch* FIG. 1, this list 127 is shown within the individual memory 126.

The first passage of the above two passages is shown italicized within the following paragraph:

"The first portion [of the message memory 122] is individual memory 126 for storing selective call messages received on selective call addresses uniquely assigned to the selective call receiver. Associated with the individual memory 126 is a hierarchical list 127 which acts as a directory for the individual memory 126. The list 127 contains message identifiers for each of the selective call messages stored within the individual memory 126. Each of the message identifiers comprises a number of elements which serve to identify the selective call message and allow the processor 112 to retrieve the data of the selective call message. These elements can include, for example, a time that the message was received, the status of the message (i.e., whether the message has been read or is unread, whether the message is locked or unlocked, etc.), the

⁸ Ex parte Clapp, 227 USPQ 972, 973 (BPAI 1985).

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length of the message, and data access points within the individual memory 126 to identify where the selective call message is stored."

The second passage reads:

"The maildrop memory 128 also has a list 129, such as a directory, associated therewith comprising message identifiers to identify the maildrop messages and where the corresponding maildrop message slots are located within the memory 128." 10

Although the Examiner has not specifically identified them as such, Applicant assumes that the "data access points" referred to at the end of the first passage are to be regarded as the claimed pointers.

However, the Examiner has already identified the alleged "message slots" as being contained within the "individual memory 126." But the hierarchal list 127 is separate and distinct from the individual memory 126. Therefore, if the alleged pointers are in either of the lists 127, 129, then they cannot possibly be part of the "first existing-message slot" in claim 2's:

"message list including a first existing-message slot having a pointer to a second existing-message slot"

As recited in claim 2, it is the message slot that has the pointer. To the extent there exists information in either list 127, 129 that identifies a message slot, that information is *not* part of the message slot itself.

Accordingly, in addition to being patentable for reasons discussed in connection with claim 1, claim 2 is also patentable because the *Mondrosch*, either alone or in combination with *Tugenberg*, fails to teach the additional limitation of claim 2.

SECTION 103 REJECTION OF CLAIM 3

Claim 3 recites the additional limitation of

"setting

a first pointer on said new-message slot to point to said first existing-message slot and

⁹ Mondrosch, col. 4, lines 14-36.

¹⁰ Mondrosch, col. 4, lines 46-50.

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a second pointer on said new-message slot to point to said second existing message-slot"

The Examiner draws attention to col. 5, lines 40-49 as disclosing this limitation. This text is embedded in the following paragraph:

"If there is a message stored in the maildrop message slot 210, the maildrop message slot link information is examined to determine if the stored maildrop message has been read or is unread 216. If the stored maildrop message has been read 216, the newly received and decoded selective call maildrop message is stored 218 in the maildrop memory 128 (FIG. 1), thereby overwriting the previously read selective call maildrop message. The maildrop message slot link information in the maildrop memory list 129 is updated 219 and processing returns to await the next received message 202."

The cited text merely states that one may overwrite a message after it has been read, and that when doing so, one modifies certain information found in the maildrop memory list 129.

The cited passage does not appear to describe any operation that manipulates pointers associated with two different message-slots. In particular, the cited passage contains no reference to first and second pointers as recited in claim 3.

Accordingly, in addition to being patentable for reasons discussed in connection with its parent claims, claim 3 is also patentable because *Mondrosch*, either alone or in combination with *Tugenberg*, fails to teach the additional limitation of claim 3.

SECTION 103 REJECTION OF CLAIM 5 AND 6

Claim 5 recites the additional limitation of

"modifying a destination mask associated with said new-message slot"

Claim 6 recites the additional limitations of

"selecting, from a plurality of constituent data-elements of said destination mask, each of said constituent data-elements corresponding to one of said processors from said plurality of processors, a selected data-element corresponding to a selected processor; and

modifying said selected data-element to indicate that said selected processor is an intended recipient."

¹¹ *Mondrosch*, col. 5, lines 39-48.

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The Examiner agrees that *Mondrosch* fails to teach these claim limitations. However, the Examiner points out that the five fields in the message header **205** shown in *Tugenberg*'s FIG. 2 are used to determine whether to accept or discard the message.

As best understood, the Examiner regards these five fields as collectively forming a "destination mask."

Even if the five fields shown in FIG. 2 formed a "destination mask," claim 5 requires "modifying a destination mask." In *Tugenberg*, receiving stations simply *inspect* the five fields, they do not modify it.

Moreover, the five fields of the message header **205** in *Tugenberg*'s FIG. 2 cannot be regarded as a destination mask because they do not carry out the function of a destination mask. The five fields in *Tugenberg*'s FIG. 2 have nothing to do with specifying a destination of a message.

According to the specification, ¹² "[e]ach processor is assigned a bit in the destination mask 52."

Tugenberg discloses no relationship between the number of stations in the system and the number of fields or bits in the message header 205 shown in Tugenberg's FIG. 2. It is therefore impossible for "each processor [i.e., a Tugenberg station] to be assigned a bit in the destination mask [i.e., a Tugenberg message header]." Therefore, the message header 205 shown in Tugenberg's FIG. 2 cannot carry out the function of the destination mask. If the message header 205 in FIG. 2 cannot carry out the function of a destination mask, it cannot be regarded as a destination mask.

Accordingly, in addition to being patentable for reasons discussed in connection with their parent claims, claims 5 and 6 are also patentable because *Mondrosch* and *Tugenberg* fail to teach the additional limitations of those claims.

¹² Specification, page 9, lines 5-8.

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SECTION 103 REJECTION OF CLAIM 7

Claim 7 recites the additional limitation of

"updating a message directory to indicate the presence of said new-message slot in said message list, said message directory being accessible to said plurality of processors."

The Examiner draws attention to column 6, lines 49-55 as allegedly disclosing this limitation.

As best understood from the cited passage and its surrounding text, the Examiner regards *Mondrosch's* list **127** as corresponding to the message directory recited in claim 7.

However, the list 127 is in the pager itself. As such, it is only accessible to the pager of which it is a part. In *Mondrosch*, a pager cannot raid another pager's list 127 to inspect its contents. Therefore, the list 127 stored inside a pager is not "accessible to [a] plurality of processors [i.e., pagers]" as recited in claim 7.

Accordingly, in addition to being patentable for reasons discussed in connection with claim 1, claim 7 is also patentable because *Mondrosch* and *Tugenberg* fail to teach the additional limitation of claim 7.

SECTION 103 REJECTION OF CLAIM 8

Claim 8 recites the additional limitation of

"updating an attention mask containing information indicative of which processors from said plurality of processors are intended recipients of messages contained in said message list."

The Examiner concedes that *Mondrosch* fails to teach this limitation. However, the Examiner regards this limitation as being taught by *Tugenberg*. In particular, the Examiner again draws attention to the same five fields in the message header **205** of *Tugenberg*'s FIG. 2. Evidently, these five fields, which collectively formed the "destination mask" in claims 5 and 6, are now to be regarded as collectively forming an "attention mask."

The destination mask is used by the sending processor to specify the intended recipients of a message. In contrast, the attention mask is used by the receiving processor to see if there are

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any messages waiting for it. These two functions are complementary. The Examiner does not indicate how the five fields of the message header 205 can be used to carry out both functions.

Moreover, the fields that comprise the message header 205 do not provide a way for a *Tugenberg* station to determine whether it has a waiting message. Accordingly, the message header 205 cannot carry out the functions of an attention mask.

It is apparent, therefore, that the fields in *Tugenberg*'s message header cannot possibly be an "attention mask." Therefore, in addition to being patentable for reasons discussed in connection with its parent claim, claim 8 is also patentable because neither reference teaches an "attention mask."

Please apply the \$510 charge for the brief fee, along with any other charges or credits to Deposit Account No. 06-1050, referencing Attorney Docket No. 07072-127001.

Respectfully submitted,

Date: November 16, 2007

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Appendix of Claims

1. A method for posting a message on a message list accessible to a plurality of processors, said method comprising:

selecting a new-message slot;

placing said message in said new-message slot; and

modifying said new-message slot to specify an intended recipient of said message, said intended recipient being selected from said plurality of processors.

- 2. The method of claim 1 further comprising inserting said new-message slot into said message list, said message list including a first existing-message slot having a pointer to a second existing-message slot.
- 3. The method of claim 2 wherein inserting said new-message slot into said message list comprises setting a first pointer on said new-message slot to point to said first existing-message slot and a second pointer on said new-message slot to point to said second existing message-slot.
- 4. The method of claim 3 wherein inserting said new-message slot into said message list further comprises setting said pointer associated with said first existing-message slot to point to said new-message slot.
- 5. The method of claim 1 wherein modifying said new-message slot to specify an intended recipient comprises modifying a destination mask associated with said new-message slot,

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said destination mask including information specifying all intended recipients of said message.

6. The method of claim 5 wherein modifying said destination mask comprises:

selecting, from a plurality of constituent data-elements of said destination mask, each of said constituent data-elements corresponding to one of said processors from said plurality of processors, a selected data-element corresponding to a selected processor; and

modifying said selected data-element to indicate that said selected processor is an intended recipient.

- 7. The method of claim 1 further comprising updating a message directory to indicate the presence of said new-message slot in said message list, said message directory being accessible to said plurality of processors.
- 8. The method of claim 7 wherein updating said message directory comprises updating an attention mask containing information indicative of which processors from said plurality of processors are intended recipients of messages contained in said message list.
- 9. The method of claim 8 wherein updating said attention mask comprises:

selecting from a plurality of constituent data-elements of said attention mask, each of said constituent data-elements corresponding to one of said processors from said

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plurality of processors, a selected data-element corresponding to a selected processor; and

modifying said selected data-element to indicate existence of a new message for which said selected processor is an intended recipient.

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Evidence Appendix

None

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Related Proceedings Appendix

None